

Status of All Claims in the Application:

B/ 1-37. (Canceled)

38. (Currently Amended) The storage system of claim ~~[[37]]~~ 62 wherein the first axis is substantially perpendicular to the second axis.

39-46. (Canceled)

47. (Currently Amended) The transport assembly of claim ~~[[46]]~~ 63 wherein the first axis is substantially perpendicular to the second axis.

48-50. (Canceled)

51. (Previously Presented) A transport assembly for moving a first cartridge and a second cartridge between a storage rack and a tape drive, the tape drive including a cartridge receiver, the transport assembly comprising:

a transporter including a first transport receiver that receives the first cartridge and a second transport receiver that receives the second cartridge;

a transport mover that moves the transporter between the storage rack and the tape drive; and

a cartridge mover that moves one of the cartridges between the storage rack and one of the transport receivers, the cartridge mover including a gripper assembly that grips one of the cartridges, a first gripper mover that moves the gripper assembly along a first axis relative to the transporter, and a second gripper mover that moves the gripper assembly along a second axis relative to the transporter, the second axis being angled relative to the first axis.

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52. (Previously Presented) The transport assembly of claim 51 wherein the first axis is substantially perpendicular to the second axis.

53. (Previously Presented) The transport assembly of claim 51 wherein the transport mover moves the transporter along an X axis, along a Y axis and about a Z axis that is substantially perpendicular to the X axis and the Y axis.

54. (Previously Presented) The transport assembly of claim 53 wherein the transport mover rotates the transporter between zero degrees and approximately 180 degrees about the Z axis to transport one of the cartridges between one of the tape receivers and the cartridge receiver.

55. (Previously Presented) The transport assembly of claim 53 wherein the transport mover rotates the transporter at least approximately 90 degrees about the Z axis to transport one of the cartridges between one of the tape receivers and the cartridge receiver.

56. (Previously Presented) The transport assembly of claim 51 further including a guide that extends substantially between the storage rack and the tape drive, the transport mover moving the transporter between the storage rack and the tape drive along the guide.

57. (Previously Presented) The transport assembly of claim 51 wherein the second gripper mover moves the gripper assembly between the first transport receiver and the second transport receiver.

58. (Previously Presented) A storage system including a storage rack, a tape drive and the transport assembly of claim 51 that is positioned near the storage rack and the tape drive, the storage rack including a plurality of tape receivers and a transporter sensor, the sensor detecting alignment of the transporter relative to at least one of the tape receivers.

59. (Currently Amended) A method for moving a first cartridge and a second cartridge between a storage rack and a tape drive, the method comprising the steps of:

gripping a first cartridge with a gripper assembly;

moving the gripper assembly along a first axis relative to a transporter with a first gripper mover to move the first cartridge into the transporter, the transporter being movable relative to the storage rack;

moving the gripper assembly along a second axis relative to the transporter with a second gripper mover, the second axis being substantially perpendicular to the first axis;

gripping a second cartridge with the gripper assembly; and

moving the gripper assembly along the first axis relative to the transporter with the first gripper mover to move the second cartridge into the transporter.

60. (Previously Presented) The method of claim 59 further comprising the step of moving the transporter with a transport mover to transport one of the cartridges to a tape drive.

61. (Previously Presented) The method of claim 60 wherein the step of moving the transporter includes moving the transporter along an X axis, along a Y axis and about a Z axis that is substantially perpendicular the X and Y axes.

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Am 62. (New) A storage system for use with a first cartridge and a second cartridge, the storage system comprising:

a storage rack including a plurality of tape receivers and a transporter sensor;

a tape drive including a cartridge receiver; and

a transport assembly that is positioned near the storage rack and the tape drive, the transport assembly moving the first cartridge and the second cartridge between the storage rack and the tape drive, the transport assembly including a transporter having a first transport receiver that receives the first cartridge and a second transport receiver that receives the second cartridge, and a transport mover for moving the transporter relative to the storage rack and the tape drive, the transport assembly including a cartridge mover having (i) a gripper assembly that grips one of the cartridges, (ii) a first gripper mover that moves the gripper assembly along a first axis relative to the transporter, and (iii) a second gripper mover that moves the gripper assembly along a second axis relative to the transporter, the second axis being angled relative to the first axis;

wherein the transporter sensor senses when the transporter is positioned near the desired tape receiver.

63. (New) A transport assembly for moving a first cartridge and a second cartridge between a storage rack and a tape drive, the tape drive including a cartridge receiver, the transport assembly comprising:

a transporter including a first transport receiver that receives the first cartridge and a second transport receiver that receives the second cartridge;

a transport mover that moves the transporter relative to the storage rack and the tape drive, the transport mover moving the transporter along an X axis and a Y axis, and rotating the transporter about a Z axis that is substantially perpendicular to the X and Y axes; and

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a cartridge mover that moves one of the cartridges between the storage rack and one of the transport receivers, the cartridge mover including (i) a gripper assembly that grips one of the cartridges, (ii) a first gripper mover that moves the gripper assembly along a first axis relative to the transporter, and (iii) a second gripper mover that moves the gripper assembly along a second axis relative to the transporter, the second axis being angled relative to the first axis.

64. (New) A transport assembly for moving a first cartridge and a second cartridge between a storage rack and a tape drive, the storage rack including a plurality of tape receivers, the tape drive including a cartridge receiver, the transport assembly comprising:

a transporter that includes a first transport receiver that receives the first cartridge and a second transport receiver that receives the second cartridge;

a gripper assembly that grips one of the cartridges and moves one of the cartridges into the transporter, the gripper assembly moving along a first axis relative to the transporter; and

a transport mover that rotates the transporter about a second axis that is different than the first axis.

65. (New) The transport assembly of claim 64 wherein the first axis is substantially perpendicular to the second axis.

66. (New) The transport assembly of claim 64 wherein at least one of the tape receivers is angled relative to the cartridge receiver.

67. (New) The transport assembly of claim 64 wherein the transport mover rotates the transporter between approximately zero degrees and approximately 180 degrees about the second axis.

68. (New) The transport assembly of claim 64 wherein the transport mover rotates the transporter at least approximately 90 degrees about the second axis.

69. (New) The transport assembly of claim 64 wherein the gripper assembly includes a first gripper mover that moves the gripper along the first axis relative to the transporter, and a second gripper mover that moves the gripper assembly along a third axis relative to the transporter that is different than the first axis and the second axis.

70. (New) The transport assembly of claim 69 wherein the third axis is substantially perpendicular to the first axis.

71. (New) The transport assembly of claim 69 wherein the second axis is substantially perpendicular to the first axis and the third axis.

72. (New) A storage system including a storage rack and the transport assembly of claim 64 positioned near the storage rack.

73. (New) The storage system of claim 72 wherein the storage rack includes a plurality of tape receivers and a transporter sensor, the sensor detecting alignment of the transporter relative to at least one of the tape receivers.

74. (New) A transport assembly for moving a first cartridge and a second cartridge between a storage rack and a tape drive, the storage rack including a plurality of tape receivers, the tape drive including a cartridge receiver, the transport assembly comprising:

a transporter that includes a first transport receiver that receives the first cartridge and a second transport receiver that receives the second cartridge;

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a gripper assembly that grips one of the cartridges and moves one of the cartridges into the transporter, the gripper assembly moving along a first axis relative to the transporter; and

a mover that rotates the gripper assembly about a second axis that is different than the first axis.

75. (New) The transport assembly of claim 74 wherein the first axis is substantially perpendicular to the second axis.

76. (New) The transport assembly of claim 74 wherein at least one of the tape receivers is angled relative to the cartridge receiver.

77. (New) The transport assembly of claim 74 wherein the mover rotates the gripper assembly between approximately zero degrees and approximately 180 degrees about the second axis.

78. (New) The transport assembly of claim 74 wherein the mover rotates the gripper assembly at least approximately 90 degrees about the second axis.

79. (New) The transport assembly of claim 74 wherein the gripper assembly includes a first gripper mover that moves the gripper along the first axis relative to the transporter, and a second gripper mover that moves the gripper assembly along a third axis relative to the transporter that is different than the first axis and the second axis.

80. (New) The transport assembly of claim 79 wherein the third axis is substantially perpendicular to the first axis.

81. (New) The transport assembly of claim 79 wherein the second axis is substantially perpendicular to the first axis and the third axis.

82. (New) The transport assembly of claim 74 wherein the mover rotates the transporter and the gripper assembly simultaneously about the second axis.

83. (New) A storage system including a storage rack and the transport assembly of claim 74 positioned near the storage rack.

84. (New) The storage system of claim 83 wherein the storage rack includes a plurality of tape receivers and a transporter sensor, the sensor detecting alignment of the transporter relative to at least one of the tape receivers.

85. (New) A method for moving one or more cartridges between a storage rack and a tape drive, the method comprising the steps of:

providing a transporter that includes a first transport receiver and a second transport receiver, each receiver being adapted to receive one of the cartridges;

moving one of the cartridges into the transporter with a gripper assembly;

moving the gripper assembly along a first axis relative to a transporter;

and

rotating the transporter about a second axis that is different than the first axis with a transport mover.

86. (New) The method of claim 85 wherein the second axis is substantially perpendicular to the first axis.

87. (New) The method of claim 85 wherein the step of moving the gripper assembly includes moving the gripper assembly along a third axis relative to the transporter, the third axis being substantially perpendicular to the first axis and the second axis.

88. (New) The method of claim 85 wherein the step of rotating the transporter includes rotating the transporter at least approximately 90 degrees about the second axis.

89. (New) A method for transporting a cartridge between a storage rack and a tape drive, the method comprising the steps of:

- providing a transporter that includes a first transport receiver and a second transport receiver, each receiver being adapted to receive one of the cartridges;
- moving one of the cartridges into the transporter with a gripper assembly;
- moving the gripper assembly along a first axis relative to a transporter;
- and
- rotating the gripper assembly about a second axis that is different than the first axis with a mover.

90. (New) The method of claim 89 wherein the second axis is substantially perpendicular to the first axis.

91. (New) The method of claim 89 wherein the step of moving the gripper assembly includes moving the gripper assembly along a third axis relative to the transporter, the third axis being substantially perpendicular to the first axis and the second axis.

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92. (New) The method of claim 89 wherein the step of rotating the gripper assembly includes rotating the gripper assembly at least approximately 90 degrees about the second axis.
